FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554
July 29, 1996

IN REPLY REFER TO:
1800B3-BJB

Mr. David W. Davis
Executive Director
New Jersey Highway Authority
P.O. Box 5050
Woodbridge, NJ 07095-5050

In re: NEW(FM), Sayreville, NJ
New Jersey Highway Authority
BPEX-940128MA

NEW(FM), Holmdel, NJ
New Jersey Highway Authority
BPEX-940128MB

Dear Mr. Davis:

The staff has under consideration the above-captioned applications filed by New Jersey Highway Authority ("NJHA") for experimental facilities. On June 24, 1994 Newark Public Radio, Inc. ("Newark"), the licensee of WBGO(FM), Newark, NJ filed an informal objection against the Holmdel application. In addition, National Public Radio, Inc. ("NPR") filed an informal objection against both applications on July 11, 1994.[1] For the reasons set forth herein, we are: (1) granting NPR's informal objection, (2) dismissing both of NJHA's applications; and (3) dismissing Newark's informal objection as moot.

BACKGROUND

Experimental Applications

Background. On January 28, 1994, NJHA, the New Jersey state authority responsible for the operation of the Garden State Parkway ("GSP"), filed applications to construct experimental broadcast stations on Channel 211 in Sayreville, NJ (BPEX-940128MA) and Channel 203 in Holmdel, NJ (BPEX-940128MB). The stations are to be the initial facilities in a network of experimental low power noncommercial FM stations along the GSP that would permit the study of several characteristics of traveller advisory services. Specifically, NJHA proposes to investigate the relative effectiveness of travellers' information broadcast service ("TIS") on AM and FM Stations and the effectiveness of alternate frequency mechanisms triggered by Radio Broadcast Data Service ("RBDS") signals. If the proposed two-site operation is successful, NJHA intends to request additional experimental authorizations to conduct synchronizing and overlap tests.

Use of an FM TIS station. NJHA currently operates TIS station(s) in the AM band. However, it claims that the usefulness of these stations is somewhat limited by the poor quality of the AM signal and the prevalence of FM receivers among the listening audience. In addition to the higher sound quality of an FM signal, NJHA further states that "[a] significant element of the experimental aspect of this project will involve the development of the techniques for program production, information handling, and related operational matters which will be necessary to provide an effective listener-friendly TIS." Finally, in order to assure the maximum

[1] Subsequent pleadings include: (1) the July 14, 1994 supplement filed by Newark; (2) the July 27, 1994 "Opposition to Informal Objection" filed by NJHA in response to NPR's July 11, 1994 informal objection; and (3) the August 5, 1994 "reply" filed by NPR.

effectiveness of its TIS service, NJHA wishes to investigate the driver-response time to posted TIS advisory signs. Based on this data, as well as unique characteristics of the GSP, NJHA hopes to ensure the optimal placement of such advisory signs.

RBDS. Use of an FM station will enable NJHA to broadcast additional information via RBDS transmission on the FM subcarrier channel. NJHA intends to conduct experiments to determine the extent of the RBDS signal for measurement of the bit error rate and "other relevant system characteristics" while providing information that would be useful to drivers in high traffic environments. In addition, the authorization of two stations will allow NJHA to test the effectiveness of the alternate frequency mechanism of RBDS.[2]

Informal Objections[3]

Newark's June 24, 1994 filing. Newark believes that the proposed Holmdel facility would cause significant objectionable interference to the operation of its Newark, NJ-licensed first-adjacent channel station WBGO-FM. Newark concedes that the proposed operation would not result in predicted overlap when considered under 47 C.F.R. § 73.509(b). However, based on the engineering consultant's calculations, the general manager states that the proposed facility would cause "actual interference" to numerous financial supporters of WBGO creating an unacceptable loss of revenue. In this regard, Newark cites 47 C.F.R. §§ 74.131(c) and 5.67(a) as barring NJHA from causing interference to existing broadcast stations. Newark states that if the NJHA application is not denied on interference grounds, it should be conditioned upon the elimination of any interference.

NPR's July 11, 1994 filing. NPR states that the application fails to justify an experimental authorization because it does not involve research and experimentation for the advancement of broadcasting nor does it propose a definite research program. NPR alleges that, instead of a definite research program, the NJHA applications describe only the benefits and objectives of the proposals. In addition, the proposed comparison of the effectiveness of AM and FM TIS operations will not result in a substantial contribution to the development of broadcast technology. Thus, NPR concludes that the applications violate 47 C.F.R. §§ 74.102 & 74.131. Furthermore, NPR alleges that NJHA is using the proposal in order to avail itself of the superior sound quality associated with FM broadcasting. NPR states that this is similar to Greater Washington Educational Telecommunications Association (WETA), (53 FCC 2d 910 (1975)) in which the applicant requested an experimental authorization to utilize a VHF frequency in lieu of its current "inferior" UHF operation.

Regarding the use of RBDS technology, NPR states that, since a number of full service public broadcast stations have already begun to use RBDS technology in a manner that is "indistinguishable from NJHA's proposal" to textually alert motorists to weather, traffic, or other important developments or to refer them to an existing AM-band TIS frequency, no experimental authorization is necessary. In fact, the automatic re-tuning feature of RBDS technology is currently employed by more than 130 FM radio stations across the country, including a number of NPR member stations.

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[2] This feature enables the receiver to lock onto an alternate signal of the same type, based on driver specified criteria (in this case, TIS stations) when the current signal becomes too weak to receive.

[3] The staff has determined that proper consideration shall be given to both Newark's and NPR's informal objections. Pursuant to 47 C.F.R. § 73.3587, parties filing informal objections are not required to demonstrate standing nor is there a limited time period for the filing of such pleadings.

In addition, NPR states that NJHA's proposal to establish a network of low-power FM stations raises fundamental policy questions concerning the Nation's public radio broadcasting system and the efficient use of radio spectrum. NPR believes these policy issues should be addressed and resolved prior to any grant of authority to NJHA for the subject applications. Citing previous instances where the Commission has acted to remove low power operations from the reserved portion of the band, NPR states that NJHA's low power network would only add to the existing congestion in this portion of the spectrum, contrary to the Commission's long-standing desire to foster full-service FM broadcasting. NPR further states that the proposal would not improve upon other existing means of providing travel advisory information and would therefore unnecessarily infringe upon channels reserved as "local outlets of community expression." Although NJHA has requested authority on a secondary, experimental basis, NPR asserts that, due to the amount of funding allocated for the program and NJHA's stated intention of constructing a network along the GSP, NJHA will seek permanent authorization of these facilities on a primary basis. If this occurs, NPR believes the Commission would be subject to numerous such requests from the state governments.

NJHA's July 27, 1994 Opposition. NJHA states the WETA precedent is not relevant to the experimental program that it proposes. In support of this claim, NJHA cites recent grants of experimental FM stations in Charlotte, NC and Miami, FL for similar research programs. In addition, NJHA believes that NPR's arguments against an experimental TIS program amount to an attack on TIS in general that should more properly be pursued via rulemaking proceeding. Furthermore, since the proposed facilities are to be secondary in nature, NJHA believes them to be more efficient use of the spectrum since they would not preclude any full service operations. Finally, since any similar operation would require Commission approval, there is no danger of NJHA's proposal leading to numerous permanent operations throughout the country.

DISCUSSION

Technical Defects

Before we address specific experimental aspects of the NJHA applications, it should be noted that both proposals would be considered fatally defective if subject to the Commission's rules for stations operating in the reserved portion of the FM band (47 C.F.R. §§ 73.500-599). Both applications include reduced copies of 7.5 minute topographic site maps. In such instances, where we cannot reliably confirm the site coordinates of the new towers, noncommercial educational (NCE) applications are routinely returned.[4]
When analyzed under the contour overlap requirements of 47 C.F.R. § 73.509(b), the Sayreville facilities would cause 0.34 sq. km of interference to first-adjacent channel station WKCR(FM), New York, NY and would receive interference from WKCR; co-channel station WRTI-FM, Philadelphia, PA; and first-adjacent channel station WVHP(FM), Highland Park, NJ.[5] The Holmdel proposal fails to include the relative field

[4] In FM Transmitter Site Map Submission Required by FCC Forms 301 and 340, 51 Fed. Reg. 45945 (released December 23, 1986), the Commission reiterated the requirements contained in the Public Notice entitled "FCC Clarifies Transmitter Site Map Requirements," Mimeo 3693, released April 5, 1985.

[5] Such overlap is not necessarily fatal for experimental proposals. All experimental authorizations are conditioned against causing interference to any full service operations. In previous instances similar to the WKCR case, where nominal amounts of caused interference are predicted, experimental proponents have been required to obtain the concurrence of the affected station. Experimental operations are not guaranteed protection from received interference and therefore the occurrence of received overlap would not bar grant of such an application. However, we may require changes to an experimental proposal if it appears that the received interference is severe enough to threaten the viability of the proposed operation.

horizontal plane pattern of the proposed directional antenna encompassing both the horizontal and vertical polarization. Although patterns were submitted for component antennas, a composite pattern for the overall array was not submitted. Absent the required antenna system composite pattern the staff is unable to make a determination regarding the interference potential of the Holmdel proposal.

Experimental Issues

Applicants for experimental broadcast stations are required by 47 C.F.R. § 74.102 to propose operations for the purpose of carrying on research and experimentation for the development and advancement of new broadcast technology, equipment, systems, or services which are more extensive than that which currently exists or which require other modes of transmission than can be accomplished by using a licensed broadcast station under an experimental authorization. In order to ensure the proper use of such an authorization, applicants are required by § 74.131(a)(1) to demonstrate that there is a definite program of research and experimentation in the technical phases of broadcasting which indicates reasonable promise of substantial contribution to the developments of the broadcast art. Furthermore, the applicant must establish that the research program could only implemented via an experimental permit. Additionally, experimental authorizations are by nature temporary: pursuant to 47 C.F.R. § 74.15(a), such stations are licensed for a one year period and renewed only upon a showing of significant progress that warrants continued experimental operation.

Validity of the proposed experimental research program. Central to NJHA's experimental proposal is the utilization of TIS stations in the FM band. The Commission has already established procedures for the operation of travelers information stations in the AM band, 47 C.F.R. § 90.242. As stated in the applications, NJHA has been authorized to operate AM TIS stations to provide traffic information along the GSP. The applicant's desire to test the "effectiveness" of FM TIS service appears to be borne of NJHA's perception that "public acceptance of the AM TIS has generally not been strong, perhaps because of the relatively inferior quality of the AM signal, ... perhaps because of the relatively unprofessional nature of the programming thereon, perhaps for some other reason or, more likely, perhaps because of a combination of all these factors." Thus, the core of the proposal lies with improved programming and presentation of the material on a different broadcast band. We do not feel that research into production methods and programming qualifies as valid experimental research as defined by § 74.102 of the rules and the use of TIS as proposed by NJHA would not constitute a definite research program warranting grant of an experimental authorization for the advancement of the broadcast art.[6] For example, while information such as the proper placement of roadside signs may be important to such areas as marketing or information dissemination, it is not relevant to the technical aspects of broadcasting. Furthermore, there is nothing to prevent NJHA from upgrading the programming quality of its existing AM TIS stations in the manner described in the proposals now. As NPR states in its objection, granting an FM TIS authorization to an existing AM TIS licensee would be analogous to the WETA case, where the Commission denied the application of a licensee seeking an "experimental" authorization in a different broadcast band as a means of overcoming its dissatisfaction with the perceived quality of its existing operation.

[6] NJHA cites two other cases where the Commission has previously granted experimental authorizations for stations to broadcast travelers information in the FM band: WHYC, Charlotte, NC and WAEM, Miami, FL. Although both stations are permitted to broadcast travelers information, such broadcasts are not the focus of the experimental programs: WHYC's authorization of 5 co-channel closely-located transmitters allows for the study of the interference reducing effects, if any, of directional antennas, monaural signals, and carrier frequency synchronization; and WAEM's authorization permits an opportunity to study the actual occurrence of second-adjacent channel interference in a largely urban environment.

Need for an experimental FM authorization. As stated above, the focal points of the proposed research program are, for the most part, non-technical in nature. The use of the relatively new RBDS technology is the only feature of the applications that may be of technical interest to existing FM broadcast stations. However, RBDS use is not subject to FCC oversight and implementation of RBDS has been left to individual stations. Accordingly, the burden of research and public information regarding the use of this technology has been assumed by various industry and trade associations.[7] This approach has, by one estimate, resulted in at least 484 FM stations utilizing RBDS technology (11 in the state of New Jersey alone).[8] Thus, given the current FCC "hands-off" policy regarding RBDS implementation, at this time we have no reason to grant an experimental authorization to investigate this technology.

Temporary experimental facility vs. permanent authorization of a new service. In its objection, NPR alleges that permanent authorizations are NJHA's ultimate goal. NPR bases this conclusion on NJHA's intention to apply for additional experimental authorizations and the fact that NJHA "... has committed significant resources for the construction of that network." However, NJHA denies this claiming that it seeks only a "limited, experimental authorization." We note in this regard that Exhibit 1 of the applications includes statements such as "... NJHA is exploring the possibility of establishing multiple transmitter sites located adjacent to the GSP, in order to provide its TIS simultaneously to a greater number and range of highway users" and "NJHA intends to seek authority to establish a number of additional FM TIS stations...." To the extent that permanent operation may be contemplated, any allocation for a new service would more properly considered in the context of a rulemaking proceeding than in an experimental authorization which is temporary in nature.[9]

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[7] "Electronic Industries Association [EIA] plans to provide 500 FM stations in top 25 markets with free RBDS encoders by March 1996. EIA will provide stations with hardware, software and training, and conduct public education program, at an estimated cost of $3.5 million. Full participation would result in RBDS service in 85% of the country." See *Communications Daily*, March 28, 1995 edition.

[8] See *Radio World, Vol. 20, No. 7, Page 13, April 3, 1996.*

[9] The issue of FM TIS was raised in the rulemaking proceeding that established the AM TIS. The Commission investigated the use of TIS on FM subcarrier channels and determined that it

> ... would not be a practical alternative as the coverage area served by most FM stations normally exceeds 3 km. Because FM stations provide wide area coverage, it would not be feasible to transmit simultaneous travelers information repetitively for several local areas." Report and Order, Docket 20509, 67 FCC 2d 917, at para 27 (1977).

The issue was reconsidered recently in the Report and Order in MM Docket 87-267:

> Our experience with TIS operation in the AM band has been very satisfactory. Its location in the AM band does not appear to discourage its use. On the contrary, as a service unique to the AM band it may have some benefit in encouraging listeners to explore what other programming is being provided there. Therefore, we are not inclined to facilitate the relocation of TIS to the FM band at this time. In The Matter of Review of the Technical assignment Criteria for the AM Broadcast Service, 6 FCC Rcd 6273, at para. 200 (1991).

We will continue to entertain proposals to improve spectrum efficiency, provided they are submitted in the proper form.[10]

CONCLUSION

In summary, the NJHA applications do not satisfy the Commission's criteria for valid experimental research programs that would further the advancement of new broadcast technology, equipment, systems or services. In addition, the Sayreville proposal would result in a small amount of interference caused to first-adjacent channel station WKCR(FM), New York, NY. Accordingly, National Public Radio Inc.'s July 11, 1994 informal objection IS HEREBY GRANTED; New Jersey Highway Authority's experimental broadcast applications File Nos. BPEX-940128MA and BPEX-940128MB ARE HEREBY DISMISSED; and Newark Public Radio, Inc.'s June 24, 1994 informal objection IS HEREBY DISMISSED AS MOOT. These actions are taken pursuant to 47 C.F.R. § 0.283.

Sincerely,

Dennis Williams
Assistant Chief
Audio Services Division
Mass Media Bureau

cc: National Public Radio, Inc.
Newark Public Radio, Inc.
Bechtel & Cole
Dow, Lohnes & Albertson

[10] The Commission is mandated (Section 303 (g) of the Communications Act) to study new and experimental uses of frequencies. However, having established the lack of a valid experimental program, this statutory requirement does not compel us to grant the applications. See e.g. Multra-Guard, Inc, 58 FCC 2d 301 (1976). Furthermore, to require this issue to be addressed via a rulemaking proceeding, contrary to NJHA's assertion, would not violate the Commission's mandate (Section 307(b) of the Communications Act) to seek efficient use of the spectrum.